

## WHAT IS CLAIMED IS:

1. A nucleic acid that encodes a non-aggregating chromo- or fluorescent mutant of an aggregating Cnidarian chromo- or fluorescent protein or mutant thereof.
- 5 2. The nucleic acid according to Claim 1, wherein said Cnidarian chromo- or fluorescent protein is from a non-bioluminescent Cnidarian species.
3. The nucleic acid according to Claim 2, wherein said non-bioluminescent Cnidarian species is an Anthozoan species.
- 10 4. A nucleic acid according to Claim 1, wherein said nucleic acid has a sequence of residues that is substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID NOS:14; 15; 17; 19; 21; and 23.
- 15 5. A fragment of the nucleic acid selected according to Claim 1.
6. A construct comprising a vector and a nucleic acid according to Claim 1.
- 20 7. An expression cassette comprising:
  - (a) a transcriptional initiation region functional in an expression host;
  - (b) a nucleic acid according to Claim 1; and
  - (c) and a transcriptional termination region functional in said expression host.
- 25 8. A cell, or the progeny thereof, comprising an expression cassette according to Claim 7 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.
9. A method of producing a chromo and/or fluorescent protein, said method comprising:
  - growing a cell according to Claim 8, whereby said protein is expressed; and
  - isolating said protein substantially free of other proteins.
- 30 10. A protein or fragment thereof encoded by a nucleic acid according to Claim 1.
- 35 11. An antibody binding specifically to a protein according to Claim 10.
12. A transgenic cell or the progeny thereof comprising a transgene that is a nucleic acid according to Claim 1.

13. A transgenic organism comprising a transgene that is a nucleic acid according to Claim 1.

14. In an application that employs a chromo- or fluorescent protein, the improvement comprising:  
employing a protein according to Claim 10.

15. In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:  
employing a nucleic acid according to Claim 1.

16. A kit comprising a nucleic acid according to Claim 1.

17. A method of producing a nucleic acid according to Claim 1, said method comprising:  
modulating at least one N-terminal residue codon of an aggregating Cnidarian chromo and/or fluorescent protein encoding sequence to produce said nucleic acid.

18. The method according to Claim 17, wherein said at least one residue is a basic residue.

19. The method according to Claim 18, wherein said modulation is a substitution of said basic residue for a neutral residue.

20. The method according to Claim 18, wherein said basic residue is lys or arg.